finder
SWITCH TO THE FUTURE

68
SERIES

High Power relay 100 A

- Power generators
- Back-up generators
- Pump control
- Disabled lift
- Inverter
- Charging Stations



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Printed circuit mount - 3.6 mm contact gap
Relay for applications with high power

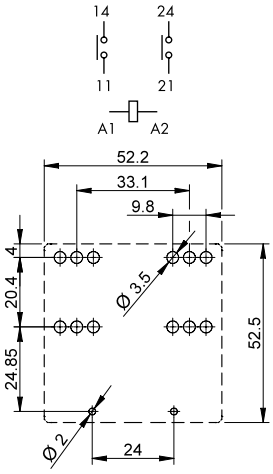
Type 68.22-4300
- 2 NO

- Contact gap ≥ 3.6 mm (according to VDE 0126-1-1, EN 62109-1, EN 62109-2)
- DC coils, with only 700 mW holding power
- Reinforced insulation between coil and contacts
- Suitable for use at ambient temperatures up to 85 °C
- Meets the EN 60335-1 requirements of resistance to heat and fire (GWIT 775 °C and GWFI 850 °C)
- Cadmium free contact materials

68.22-4300



- 2 NO
- Contact gap 3.6 mm
- PCB mount



Copper side view

For outline drawing see page 6

Contact specification		
Contact configuration		2 NO
Contact gap	mm	≥ 3.6
Rated current/ Maximum peak current (for 1 ms)	A	100/300
Rated voltage/ Maximum switching voltage	V AC	400/690
Rated load AC1/AC7a (per pole)	VA	40000
Rated load AC15 (per pole @ 230 V AC)	VA	4600
Single-phase motor rating (230 V AC)	kW	2.2
Three-phase motor rating (480 V AC)	kW	—
Breaking capacity DC1: 24/110/220 V	A	100/5/1.2
Minimum switching load	mW (V/mA)	1000 (10/10)
Standard contact material		$AgSnO_2$
Coil specification		
Nominal voltage (U_N)	V DC	12 - 24
Rated power	W	2.9
Operating range (–40…+70°C)	DC	(0.90 …1.1)U_N
Energy-saving mode (–40…+85)°C		
Operating range for 1 s		(0.95…2.5)U_N
Holding voltage range	DC	0.5 U_N
Minimum holding power	W	0.7
Must drop-out voltage	DC	0.05 U_N
Technical data		
Mechanical life	cycles	$1 \cdot 10^6$
Electrical life at rated load AC7a	cycles	$30 \cdot 10^3$
Operate/release time	ms	25/3
Ambient temperature range (energy-saving mode)	°C	–40…+70 (–40…+85)
Environmental protection		RT II
Approvals (according to type)		EAC D cULus

Ordering information

A

Example: 68 series, power relay for printed circuit, 2 NO contacts, 12 V DC coil.

										A	B	C	D	
6	8	.	2	2	.	9	.	0	1	2	.	4	3	0	0

Series

Type
2 = 3-phase PCB terminals,
1.5 mm gap between PCB and relay base

No. of poles
2 = 2 pole

Coil version
9 = DC

Coil voltage
See coil specifications

A: Contact material
4 = Standard $AgSnO_2$

B: Contact circuit
3 = NO, ≥ 3.6 mm contact gap

C: Options
0 = None

D: Special versions
0 = Standard

Technical data

Insulation according to EN 61810-1			
Nominal voltage of supply system		V AC	400/690 3-phase
Rated insulation voltage		V AC	630
Pollution degree			3
Insulation between coil and contact set			
Type of Insulation			Reinforced
Overvoltage category			III
Rated impulse voltage		kV (1.2/50 µs)	6
Dielectric strength		V AC	5000
Insulation between adjacent contacts			
Type of Insulation			Basic
Overvoltage category			III
Rated impulse voltage		kV (1.2/50)µs	6
Dielectric strength		V AC	4000
Insulation between open contacts			
Type of disconnection			Full-disconnection
Overvoltage category			III
Rated impulse voltage		kV (1.2/50)µs	4
Dielectric strength		V AC	2500
Insulation between coil terminals			
Rated impulse voltage (surge) differential mode (according to EN 61000-4-5)		kV (1.2/50 µs)	4
Other data			
Bounce time: NO		ms	2
Vibration resistance (10…150)Hz: NO		g	9
Shock resistance		g	30
Power lost to the environment	without contact current	W	2.9
	with rated current	W	13
Test procedure			B (single mounting)
Recommended distance between relays mounted on PCB in case of group mounting		mm	≥ 20
Short circuit protection			
Rated conditional short circuit current		kA	5
Back-up fuse for motor load		A	63 (delayed type)

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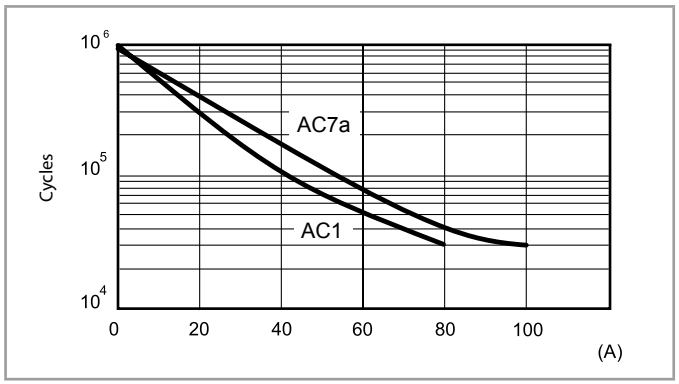
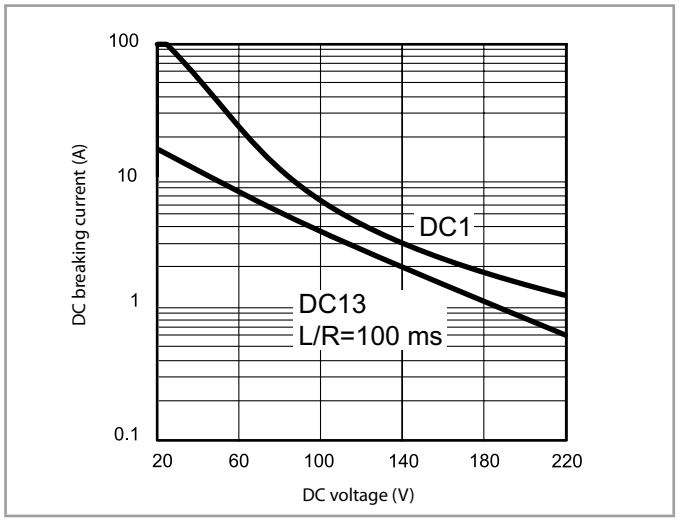
Contact specification

F 68 - Electrical life v contact current



NOTE: for ambient temperatures between 70 and 85 ° C, the electrical life is reduced by 30%

H 68 - Maximum DC breaking capacity



When switching a resistive (DC1) or inductive (DC13) load having voltage and current values under the corresponding curve, an electrical life of > 30000 cycles can be expected.

NOTE: The heating and electrical endurance tests have been performed on relays soldered on PC boards having the following characteristics: double side, copper thickness >105 µm, contact tracks width 40 to 45 mm, total cross section about 10 mm^2

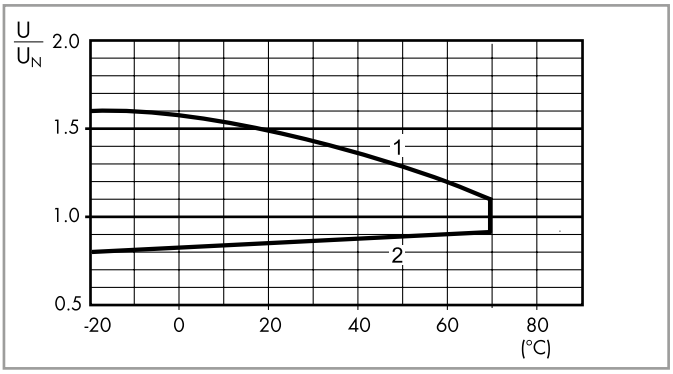
Coil specifications

A

DC coil data

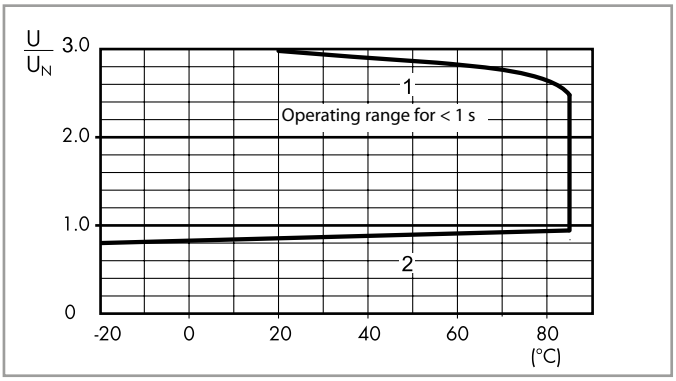
Nominal voltage	Coil code	Operating range (@ 70 °C max)		Holding voltage	Resistance	Rated coil consumption I at U_N
U_N		U_{min}	U_{max}	U_h	R	I_N
V		V	V	V	Ω	mA
12	**9**.012	10.8	13.2	6.0	50	240
24	**9**.024	21.6	26.4	12.0	200	120

R 68-1 - Operating range v ambient temperature,
with standard (continuous) coil energization (–40…+70)°C



1 - Max. permitted coil voltage.
2 - Min. pick-up voltage with coil at ambient temperature.

R 68-2 - Operating range v ambient temperature,
in energy saving mode (–40…+85)°C

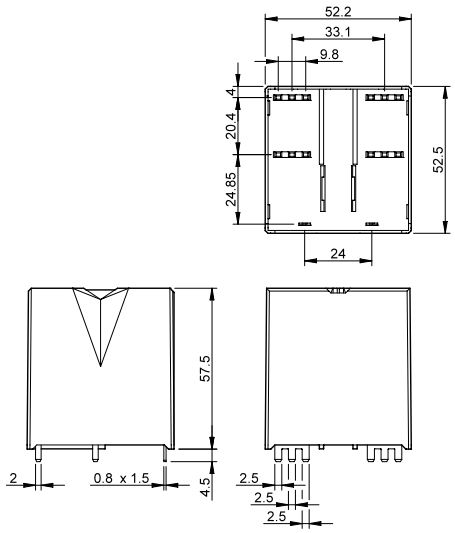


1 - Max. permitted coil voltage.
2 - Min. pick-up voltage with coil at ambient temperature.

Energy saving mode
In some applications, such as photovoltaic inverters, it may be necessary to minimize the overall relay power dissipation and to permit use at higher ambient temperature levels (up to 85 °C). This can be achieved by initially applying a coil voltage within the Energy saving mode Operating range (see diagram to the left) and then rapidly (< 1 s) reducing the coil voltage to a level within the Holding voltage range. The lower the Holding voltage, the lower is the continuous power dissipation of the coil (0.7 W minimum).
Coil voltages as high as 2.5 U_N may be used, when necessary, to reduce the contact operate time.

Outline drawings

Type 68.22



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Please see general technical information